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| **Qualification Details** | | | |
| **Training Package Code & Title** | **UEE– Electrotechnology Training Package (Release 6.0)** | | |
| **Qualification Code & Title** | **UEE40720 – Certificate IV in Electronics and**  **Communications** | **State code** | **BFP4** |
| **UEE40120 – Certificate IV in**  **Computer Systems** | **BFL8** |
| **UEE50520 – Diploma of Electronics and**  **Communications Engineering** | **BFP5** |
| **UEE50120 – Diploma of**  **Computer Systems Engineering** | **BFQ6** |

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| **Student Name** |  | | |
| **Student Declaration** | I declare that the evidence submitted is my own work:  **………………………………………………………………………….** | | |
| **Assessors Name** |  | | |
| **Date Due** | Click here to enter a date. | **Date Received** | Click here to enter a date. |

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| **Units of Competency (UoC) detailed in this DAP | Week** | | | |
| **Unit Code &**  **Title** | UEECS0020 – Evaluate and modify object-oriented code programs  UEEIC0012 – Develop structured programs to control external devices | **State code** | OCA73  OCA08 |
| **Assessment Tool** | **AT2\_Portfolio2**  Develop simple and challenging program | | |

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| **Assessment Decision** | Satisfactory | | | Not Yet Satisfactory | | |
| **Assessor Signature** |  | | **Date** | | Click here to enter a date. | |
| **Feedback to student** | | | | | | |
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| **Feedback from student** | | | | | | |
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| **Student signature** | |  | **Date** | | |  |

**Assessment Instruction**

**Instruction to the student:**

* OHS will be observed for the entire Assessment.
* The attached checklist will be used to mark your assessment submission. Please read it carefully before start working on your assessments.
* You must finish all the activities.
* You must fill the “Debugging Table” (at the end of the assessment sheet) with your problems/issues that you have faced during the program development process. **This table cannot be left blank.**
* This worksheet is to be completed during the lecture/lab, if possible, and submitted as a **single zip file or zipped file** via the Blackboard submission button before the due date.
* You can use the following tools to develop your programs at home. However, you need to represent your work and how have you done it to your lecturer.
* Python 3 web Interpreter
* Raspberry Pi Sense HAT Web Emulator
* W3School Python Reference
* Python Tutorial

# **Introduction:**

*This assessment introduces you to understanding the use of operators, user input and literals. To deepen your understanding of Python you are required to attempt all activities and questions.*

**Student Checklist:**

Students are required to complete all the below tasks within one-week **PC1.4**

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| Tasks (OHS will be observed for the entire Assessment) **[(1.1/1.2) (2.1)** | Completed to Industry Standard. You will be required to demonstrate knowledge of established OHS procedures and best practices (e.g., safe handling practices) **(1.6)** |
| Finish ACTIVITY 1 |  |
| Finish AVTIVITY 2 |  |
| Log for problems. Please Use the table (**Debugging Table**) at the end of the assessment. | **PC (2.5) (2.6)**  **PC (3.1/3.2/3.3)** |

For this assessment you will be required to create a basic Python program that:

* Gets user input, uses the input set a location and colour of an RGB LED, and loops until the user enters a specified exit character. **PC 1.3/1.4/1.5/1.6**
* Make sure your application uses Python language features, operators, control structures and syntax. **PC 1.6/2.2/2.3**

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| **ACTIVITY 1** |
| 1. **Create a flowchart or a pseudocode or an algorithm for the Task below.** |
| 1. Must get **input** from the user for:  * Display ‘X’ coordinate (between 0 and 7) * Display ‘Y’ coordinate (between 0 and 7) * Choice of LED color as a single letter (R, G, B or W for Red, Green, Blue or White respectively)   **PE 1.3/1.4/2.2/2.3/2.4**  **2.5/2.6** |
| 1. User input must be validated to above; an error message must be shown if not and user requested to enter information again.   **PE 2.6/3.1** |
| 1. Input from the user is used to set the location and color of a single RGB LED on the 8x8 Sense HAT LED Matrix.   **PE 1.5/1.6/2.3/2.6** |
| 1. Program is to loop continuously until the user enters ‘X’ as an input at any time (upper or lower case).   **PE 1.5/1.6/2.3/2.6** |
| 1. Program should be robust and not crash for any reasonable input (i.e. letters and numbers). 2. Exception handling must be included.   **PE 3.1/3.2** |
| 1. Program should be reasonably documented and discuss the logic you used with your Lecturer (e.g., any functions written should have a have a brief description). 2. Comment your code.   **PE 3.3** |

**ACTIVITY 2**

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| 1. Write a program based off the following flow chart: |
| **PE 3.3** |

**ACTIVITY 3**

Log for problems. Please Use the (**Debugging Table**) for **Any problems, including errors and bugs when developing coding.**

**Debugging Table (Must be filled)**

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| **Any problems, including errors and bugs** | **Solutions** | **Date** |
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**Table 1**